

WHAT IS CLAIMED IS:

1. A ferrite film, comprising magnetized grains or constituents analogous to those that are regularly arranged.
- 5 2. A ferrite film as set forth in claim 1, wherein the ferrite film has magnetic anisotropy.
3. A ferrite film as set forth in claim 2, wherein the constituent has uniaxial anisotropy.
4. A ferrite film as set forth in claim 3, having an axis of easy
10 magnetization due to the uniaxial anisotropy of the constituent causes, wherein the axis is either in substantially parallel with a thickness direction of the ferrite film or in substantially parallel with an in-plane direction of the ferrite film.
5. A ferrite film as set forth in claim 1, wherein the ferrite film is magnetically isotropic.
- 15 6. A ferrite film as set forth in claim 5, wherein the constituent has either the uniaxial anisotropy or multiaxial anisotropy.
7. A ferrite film as set forth in claim 6, having an axis of easy magnetization due to the uniaxial anisotropy of the constituent causes, wherein the axis is either in substantially parallel with a thickness direction of the ferrite
20 film or in substantially parallel with an in-plane direction of the ferrite thin film.
8. A ferrite film as set forth in claim 1, wherein the ferrite film includes Ni, Zn, Fe and O.
9. A ferrite film as set forth in claim 8, further including Co, wherein a content of Co, by a value of $\text{Co}/(\text{Fe} + \text{Ni} + \text{Zn} + \text{Co})$ by molar ratio, is 0/3 or
25 more and 0.3/3 or less.
10. A ferrite film as set forth in claim 9, wherein owing to induced magnetic anisotropy resulting from a peculiar distribution of Co ions, an axis of easy magnetization of the ferrite film is in substantially parallel with a thickness

direction thereof or with an in-plane direction.

11. A ferrite film as set forth in claim 1, wherein the constituent having uniaxial anisotropy includes Co.

12. A ferrite film as set forth in claim 1, wherein the constituent having
5 multiaxial anisotropy include Ni, Zn, Fe and O.

13. A ferrite film having a ratio of peak intensities corresponding to a (222) crystal lattice plane and a (311) crystal lattice plane in an X-ray diffraction pattern of a surface of the film, I_{222}/I_{311} , said ratio being larger than 0.05.

14. A ferrite film as set forth in claim 1, said ferrite film including at
10 least one kind of Ni, Zn, Fe and O.

15. An electromagnetic noise suppressor, comprising a ferrite film in which magnetized grains or constituents analogous to those are regularly arranged.

16. An electromagnetic noise suppressor as set forth in claim 15,
15 wherein the ferrite film is directly or indirectly formed on any one substrate of a support, an electronic wiring board and a semiconductor integrated wafer.

17. An electromagnetic noise suppressor as set forth in claim 15, said ferrite film having the magnetic anisotropy.

18. An electromagnetic noise suppressor as set forth in claim 17,
20 wherein the constituents have the uniaxial anisotropy.

19. An electromagnetic noise suppressor as set forth in claim 18, having an axis of easy magnetization due to the uniaxial anisotropy of the constituents, said axis being either in substantially parallel with a thickness direction of the ferrite film or in substantially parallel with an in-plane direction of
25 the ferrite film.

20. An electromagnetic noise suppressor as set forth in claim 15, the ferrite film having the magnetic isotropy.

21. An electromagnetic noise suppressor as set forth in claim 20, wherein the constituents have either the uniaxial anisotropy or the multiaxial anisotropy.

22. An electromagnetic noise suppressor as set forth in claim 21, the
5 electromagnetic noise suppressor having an axis of easy magnetization due to the uniaxial anisotropy of the constituent, wherein said axis is either in substantially parallel with a thickness direction of the ferrite film or in substantially parallel with an in-plane direction of the ferrite film.

23. An electromagnetic noise suppressor as set forth in claim 15, the
10 ferrite film including Ni, Zn, Fe and O.

24. An electromagnetic noise suppressor as set forth in claim 23, further including Co; wherein a content of Co, by a value of $\text{Co}/(\text{Fe} + \text{Ni} + \text{Zn} + \text{Co})$ by molar ratio, is 0/3 or more and 0.3/3 or less.

25. An electromagnetic noise suppressor as set forth in claim 24,
15 wherein owing to the induced magnetic anisotropy resulting from a peculiar distribution of Co ions, an axis of easy magnetization of the ferrite film is in substantially parallel with a thickness direction thereof or with an in-plane direction.

26. An electromagnetic noise suppressor as set forth in claim 15,
20 wherein the constituent having uniaxial anisotropy includes Co.

27. An electromagnetic noise suppressor as set forth in claim 15, wherein the constituent having multiaxial anisotropy includes Ni, Zn, Fe and O.

28. An electromagnetic noise suppressor, including a ferrite film having a ratio of peak intensities corresponding to a (222) crystal lattice plane
25 and a (311) crystal lattice plane in an X-ray diffraction pattern of a surface of the film, I_{222}/I_{311} , wherein said ratio is larger than 0.05.

29. An electromagnetic noise suppressor as set forth in claim 28, the ferrite film including at least one kind of Ni, Zn, Fe and O.

30. A method of manufacturing a ferrite film in which magnetized grains or constituents analogous to that are regularly arranged, comprising the step of forming a ferrite film in the presence of a magnetic field.

31. A method of manufacturing a ferrite film as set forth in claim 30,
5 wherein the ferrite film is formed in the presence of a rotating magnetic field.

32. A method of manufacturing a ferrite film in which magnetized grains or constituents analogous to that are regularly arranged, the method includes the steps of: bringing a reaction solution containing at least a ferrous ion into contact with a substrate; removing the reaction solution from the
10 substrate; bringing an oxidizing solution containing at least an oxidant into contact with the substrate; and removing residue that does not contribute to the formation of the ferrite film of the reaction solution and the oxidizing solution from the substrate.

33. A method of manufacturing a ferrite film as set forth in claim 32,
15 wherein the removing the reaction solution and the oxidizing solution from the substrate makes use of the fluidity imparted to the reaction solution and the oxidizing solution due to gravity and a centrifugal force.

34. A method of manufacturing a ferrite film as set forth in claim 32,
wherein the ferrite film is formed by repeating the above-mentioned respective
20 steps.

35. A method of manufacturing a ferrite film as set forth in claim 33,
wherein as the substrate, use is made of a substrate having the center line average roughness Ra of larger than 0 and 10 μm or less.

36. A method of manufacturing a ferrite film as set forth in claim 32,
25 wherein the ferrite film is formed so that a ratio of peak intensities corresponding to a (222) crystal lattice plane and a (311) crystal lattice plane in an X-ray diffraction pattern of a surface of the film, I_{222}/I_{311} , said ratio of peak intensities being larger than 0.05.

37. A method of manufacturing a ferrite film as set forth in claim 32, wherein the ferrite film includes at least one kind of Ni, Zn, Fe and O.

38. A method of suppressing an electromagnetic noise by use of an electromagnetic noise suppressor provided with a ferrite film having the
5 magnetic anisotropy, wherein the ferrite film is disposed with an axis of easy magnetization arranged in substantially parallel with respect to a forwarding direction of a high frequency current or a conducted noise that is a target of electromagnetic noise suppression.

AS PER
37 CFR 1.126

39. A method of suppressing an electromagnetic noise as set forth in
10 claim 39, wherein the ferrite film is formed by regularly arranging magnetized grains or constituents analogous to that and the constituents have the uniaxial anisotropy.